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Mini Review Open Access

Understanding colorectal cancer in Malaysia: A mini-review and pioneering colorectal cancer awareness, screening and treatment project

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ABSTRACT

Colorectal cancer is a major cause of morbidity and mortality worldwide. It has been identified as the most common cancer in men and second most common cancer in women in Malaysia. This mini-review is meant to present the current state and overview of colorectal cancer in Malaysia. Our efforts through EMPOWERED, The Cancer Advocacy Society of Malaysia to reduce the toll of colorectal cancer through a customised annual Colorectal Cancer Awareness, Screening and Treatment Project with high compliances are also briefly summarised.

Overview of colorectal cancer in Malaysia

Colorectal cancer (CRC) has garnered increasing attention in many Asian countries in recent years because the incidence of CRC has been growing up to four times during the past decades in the region[1,2]. Paradoxically, CRC patients in the region also had poorer survivability when compared to the more developed regions even though there were slightly less colorectal cases in the region[3]. The similar increasing trend can also be seen in Malaysia, in which CRC is the second most common cancer with an overall incidence and mortality rate of 21.3 cases and 9.8 cases per 100,000 populations respectively from the year 2008 to 2013[4].

Changes in dietary patterns and lifestyle possibly due to globalization and improving economic status, as well as the availability of screening programme may account for the observation[5,3]. The established risk factors for CRC can be divided into lifestyle, behavioural and genetic factors such as obesity, sedentary lifestyle, low dietary fibre intake, red meat consumption, age and family history of CRC[6-9]. Gender and races also appear to influence the incidence of CRC with male and Chinese race reported to be the unfavorable predictive factors[4]. Given the trend of increasing incidence of CRC in the region, it is not surprising that economic burden of the disease has been projected to increase in tandem with an estimated additional cost of RM108 million (USD25.6 million) per year, for management of new cases in Malaysia[10,11].

Notably, due to wide geographical variation, the demography of CRC patients in the Malaysia differs from those in the more developed regions[12]. Malaysia is a multiracial country with an

estimated population of 32 million, consisting of Malays, Chinese, Indians, and numerous indigenous people[13]. Overall, most patients (65%) in Malaysia presented late to the healthcare setting with advanced stage CRC, and mainly left-sided tumours (75%) which have a better prognosis as compared to right-sided tumours[14,15]. More than 55% of the colorectal cancer cases were diagnosed in Malaysians above the age of 50, with an additional 12.7% diagnosed in people between the age of 40 to 50[4]. Given the poor prognosis and high economic burden of advanced CRC, early detection of CRC by active screening of the average risk group is supported by evidences and highly recommended by various organizations[6,16,17,9,18]. Generally, CRC screening is recommended for populations aged 50 to 75 years using fecal immunochemical test (FIT)[6]. A risk-stratified scoring system can also be considered to prioritize high-risk population for colonoscopy[19,20,18]. The diagnostic accuracy and effectiveness of FIT for CRC screening in Malaysian population has also been demonstrated[21].

Although there exist previous consensus advocating CRC screening for populations at an earlier age of 40 years and above for better coverage of the average risk group in Malaysia when compared to developed countries[12,22]. However, to date, there is no systematic implementation of nationwide CRC screening programme and up-to-date guidelines for CRC screening in Malaysia[22,11]. Based on the population demography in Malaysia, it is estimated that the population with average risk of colorectal cancer to be screened at the age of 40 and above is 1.94 million[13]. The time to endoscopy was estimated to range from 2 weeks to a mean of 15 weeks[23,24].

Additionally, studies have also revealed barriers to the widespread implementation of CRC screening programme in Malaysia such as low uptake and poor public awareness of CRC screening, and poor participation rate of primary care physicians in CRC screening[25-28]. It was reported that majority of the population is not willing to undergo CRC screening in Malaysia[29,30]. The major barriers identified towards uptake of CRC screening were financial constraint, a lack of belief in personal susceptibility, perception that screening is unnecessary as a result of lack of knowledge and, fear of pain and embarrassment[29,31,30,32]. Age, gender, income, and education level were found to be significant determinants of public awareness and knowledge of CRC screening[33]. Interestingly, lack of physician's recommendation due to poor physician participation rate also contributed to the low uptake of CRC screening[29]. A recent study conducted in northern Malaysia has found that the compliance to colonoscopy among study participants with positive FIT was also sub-optimal[34].

Choosing to act

Given the increasing burden and poor public awareness of colorectal cancer in Malaysia, EMPOWERED, The Cancer Advocacy Society of Malaysia has been executing its customised annual Colorectal Cancer Awareness, Screening and Treatment Project (CCASTP) since 2010. This project aims to trigger general public awareness about the prevalence of colorectal cancer which contributes to the second largest cancer-related mortality worldwide. The execution of this large-scale project with four detailed phases (i. Colorectal Cancer Awareness Campaign, ii. Colorectal Cancer Screening workshop, iii. Collection of Used FIT-kits and Arranging Hospital Visits for Residents with Positive Result i.e., Blood in Stool and iv. Patient Support Program) has delivered education, screening and treatment and personalized support programs into tens of thousands of Malaysian homes which particularly target the lower income and under-resourced Malaysian communities[35]. The first phase Colorectal Cancer Awareness Campaign is inclusive of customized educational, interactive and fun-filled activities organized at the communities to raise awareness about colorectal cancer. Strategic use of media platform, mass distribution of flyers, putting up campaign posters and banners at strategic locations, and having trained volunteer medical students conducted multiple rounds of door-to-door knock to conduct census, promote the campaign and raise awareness about the disease are carried out. The second phase Colorectal Cancer Screening Workshop entails volunteer trainings where selected volunteers are trained as registrar/FIT kits instructor/usher to conduct interview of colorectal cancer screening, to provide FIT kits tutorial, and to facilitate the screening day to ensure smooth-running of the program. The registered subjects will be instructed on how to use, when and where to return the FIT kits in a tutorial fashion. Three types of FIT kits are used between 2010 and 2017, namely OC-Auto Sampling Bottle 3/EIKEN Chemical Co. Ltd. (from 2010-2012), Clearview Fecal Occult Blood Extraction Buffer/Inverness Medical (from 2013-2015) and *One Step* Fecal Occult Blood Test Device (Feces)/ABON (2016-2017). The former is a quantitative test while the latter two are qualitative tests. For the third phase Collection of Used FIT kits and Arranging Hospital Visits for Residents with Positive Result, registered subjects will be given two to three days to collect stool samples and to return the used FIT kits to EMPOWERED. EMPOWERED team will call up the subjects if they did not show up on collection day. The kits will be sent off to a collaborating medical centre/clinic immediately for laboratory processing. The results of the FIT test will be fed back to the residents within 2 weeks. Trained nurse volunteers/medical officer in charge will break the news to the affected residents about the positive blood findings in their stool. Appointments for colonoscopy at appointed screening hospitals will be prearranged and given during these news-breaking sessions. The waiting time to colonoscopy was around two to three weeks. This will

be followed by the final phase which is the Patient Support Program. EMPOWERED recognizes that beneficiaries of the program who need to undergo treatment, require emotional and moral support throughout their medical journey. Arrangements will be made for the residents to be picked up from their home doorsteps for all hospital appointments and to ensure that they receive much needed companionship and psychological support from trained volunteers. Through early detection of colorectal cancer and curative treatment, this project has saved lives.

From the previous study (Ng et al., 2016) spanning 2010-2015 with 1436 subjects, although colorectal cancer knowledge and awareness are poor in low-income communities, the average return rate of the FIT kits and rate of compliance with colonoscopy examination were 91.2% and 70.3%, respectively. The high percentage of compliances can be attributed to the intensive strategies involving the vital multiple rounds of the door-to-door knock to promote the campaign and to obtain consensus as well as the personalized Patient Support Program to ensure that the beneficiaries of the project will be able to follow through throughout their entire medical journey. In 2017, the society continues the efforts by collaborating with the Department of Health Kuala Lumpur and Putrajaya, Malaysia to perform the screening at Malaysia Government Health Clinics instead of selected public low-cost housing residential areas in the previous years. This allows EMPOWERED to reach out to a larger population to save more lives through the process of early cancer detection and intervention (unpublished data). Cooperation and commitments from government, non-government, political and professional bodies will be crucial to bring the project initiative to the next level and to realize the ultimate goal of implementing a nationwide, population-based CRC screening in Malaysia to combat the increase in CRC mortality.

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Conflict of Interest

The authors declare no conflict of interests.

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